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The primary aim of *World Journal of Clinical Cases* (*WJCC*, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

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Bowen's disease on the palm: A case report

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Abstract

BACKGROUND

Bowen's disease (BD) is a persistent, progressive intraepidermal carcinoma. BD usually occurs in areas exposed to sunlight. Involvement of the dorsum of the hand is not rare, but that of the palmar aspect is very unusual. Only a few cases have been reported in the literature.

CASE SUMMARY

Here, we report the case of a 48-year-old male patient who presented with a history of persistent local erythema lasting for 2 years on the thenar eminence of the left palm. Initially diagnosed as hand eczema, the condition did not improve with intermittent treatment with anti-allergy medications or topical glucocorticoid ointments, among other approaches. Then, the area of erythema gradually enlarged and was accompanied by mild itching. For a definite diagnosis and treatment, the patient came to our hospital. Dermoscopic examination revealed BD, and histopathological examination confirmed the diagnosis. We performed partial resection of the skin lesion followed by photodynamic therapy. No recurrence was observed at the 6-mo follow-up.

CONCLUSION

For all atypical palmar lesions, early dermoscopy and/or skin biopsy are needed to avoid missed diagnosis or misdiagnosis.

Key words: Bowen's disease; Dermoscopy; Pathology; Case report

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Core tip: The palm is a rare site for Bowen's disease (BD). Local erythema and scaly

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skin are the first symptoms, which are easily misdiagnosed. We report a case of BD on the left palm that may have been induced by physical stimulation. Dermoscopy had a specific diagnostic performance, and skin biopsy further confirmed the diagnosis. In this case, there was no local recurrence after surgical resection and photodynamic therapy (PDT). Surgery combined with PDT can be used as an effective strategy for treating BD. Dermoscopy can be used as a routine examination for the diagnosis of chronic erythemato-squamous diseases.

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INTRODUCTION

Bowen's disease (BD), also known as squamous cell carcinoma *in situ*, is characterized by isolated, slowly enlarged, erythematic, squamous papules or plaques. The borders are often sharply marginalized but may be irregular. Its aetiology and pathogenesis are still unclear but are mainly related to long-term exposure to inorganic arsenic, viral infection, external stimuli, excessive ultraviolet radiation, and genetic factors. BD most commonly occurs on the head and neck, trunk, lower limbs, and mucous membranes. Kossard *et al*^[1] analysed 1001 cases of BD in 1992 and found no cases on the palm. Until now, only a few cases of BD on the palm have been reported. In most of these cases, the patient had risk factors for BD, such as arsenic exposure or human papilloma virus (HPV) infection. Here, we present a case of BD clinically presenting as erythema on the left palm.

CASE PRESENTATION

Chief complaints

A 48-year-old man of Uygur ethnicity was admitted to the People's Hospital of Xinjiang Uygur Autonomous Region with a history of persistent local erythema for 2 years on the left palm.

History of past illness

The patient did not have a specific history of past illness.

Personal and family history

His family history was unremarkable.

Physical examination upon admission

A dark red erythematic area 2.1 cm × 3.0 cm in size and irregular in shape was observed on the thenar eminence of the left palm, with desquamation on the surface, no ulceration or exudation, and a clear lesion boundary (Figure 1).

Laboratory examinations

We investigated 23 HPV genotypes (6, 11, 16, 18, 31, 33, 35, 39, 42, 43, 44, 45, 51, 52, 53, 56, 58, 59, 66, 68, 73, 81, and 82) by PCR, and no HPV genotypes were detected from the lesion. Fungi and non-tuberculous mycobacteria were also not identified by tissue culture. Tissue specimens were obtained by biopsy.

Dermoscopy revealed a clear, scaly, reddish-brown background with glomerular vessels and a scaly surface, which are specific features of BD (Figure 2). Skin biopsy of the erythema on the left palm showed hyperkeratosis and parakeratosis, atypical keratinocytes throughout the epidermis, most mitotic phases, disordered cell arrangement, and dyskeratotic cells; additionally, some keratinocytes were vacuolated. A moderate amount of inflammatory infiltrate was present in the upper dermis, which is consistent with BD (Figure 3).

FINAL DIAGNOSIS



Figure 1 A dark red erythematous area 2.1 cm × 3.0 cm in size and irregular in shape was observed on the thenar eminence of the left palm, with desquamation on the surface and a clear lesion boundary.

According to the pathological examination, the final diagnosis was BD.

TREATMENT

The lesion was surgically removed. The safe margin for resection of the lesion is 5 mm and the depth are the full thickness of the skin. After the suture removal, the skin lesion and around 0.5 cm was incubated with a 20% 5-amino-levulinic acid oil-in-water emulsion and photosensitized for 4 h under blocking. Using Omnilux 630 nm as the light source, the delivery dose was 63 J/cm². Three photodynamic therapies (PDT) were given at intervals of 2 wk to prevent recurrence. No adverse events occurred.

OUTCOME AND FOLLOW-UP

The symptoms of pruritus disappeared in the skin lesion of the patient after surgery, and no recurrence was observed at the 6-mo follow-up (Figure 4). We will continue to follow this patient in order to see if there is recurrence in the later period.

DISCUSSION

BD usually affects the elderly and mainly occurs in areas exposed to sunlight. However, it can also occur in areas that are not exposed to the sun, such as the genitalia. BD rarely occurs on the palm or sole. There have been few reports on the occurrence of BD on the palm worldwide.

In 1969, Achten *et al*^[2] reported the first case of BD on the palm, which was treated with 5-fluoro-uracil ointment. So far, nearly 20 similar cases have been reported worldwide. Some reports have been published for a long time, the full text cannot be obtained, and the diagnosis and treatment methods cannot be clearly defined. Therefore, we reviewed the reports over the last 20 years. There have only been seven reports of BD on the palm^[3-9] (Table 1), with most cases occurring in middle-aged and elderly patients. The proportion of males and females was similar. The course of the disease was 2-15 years. The lesion size was mostly greater than 1 cm. The aetiology was mainly related to HPV infection and contact with arsenic. The patient described in this case had no history of arsenic exposure. PCR technology was used to detect HPV, and no evidence of the virus was found. Fungi and non-tuberculous mycobacteria were not identified by tissue culture. The patient is a truck driver, and the lesion was on the thenar eminence of the left palm. Long periods of friction against the steering wheel might be related to the occurrence of BD in this case and may be an important risk factor for BD.

In three of the seven reported cases, the patients underwent surgical resection and did not develop recurrence after surgery^[6,8,9]. One patient was treated with 5-fluorouracil^[5]. One patient underwent combined treatment with cisplatin, 5-fluorouracil, and radiotherapy because of lymph node metastasis^[3]. By the 6-mo follow-up, the patient had relapsed and was treated surgically. The most effective treatment for BD is surgical resection; other methods, such as 5-fluorouracil, cryotherapy, and PDT, can also be applied. If there is metastasis, comprehensive

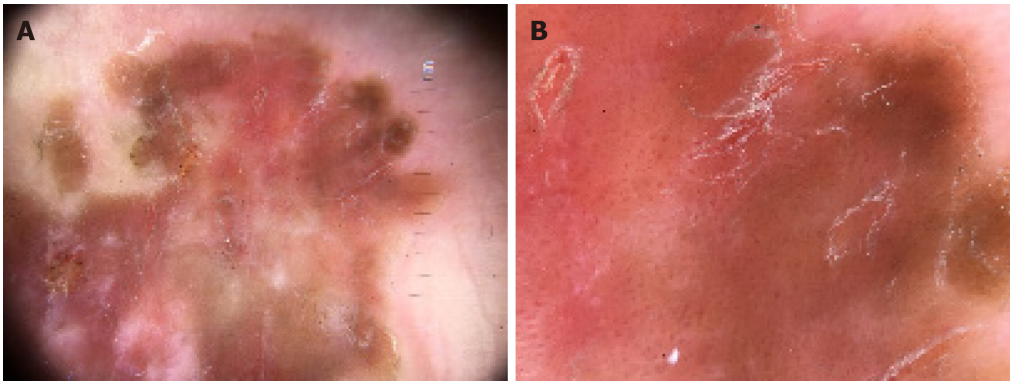


Figure 2 Dermatological features of Bowen's disease. A and B: Dermoscopy revealed a clear, scaly, reddish-brown background with glomerular vessels and a scaly surface.

treatment is needed. Moreover, good therapeutic results have also been achieved with PDT for BD at some unique sites, such as subungual sites^[10]. In this study, surgical treatment combined with postoperative PDT further helped prevent recurrence. This method can be used in patients with a high expected postoperative recurrence rate.

BD on the palm is rare and can mimic psoriasis, eczema, lichen planus, or contact dermatitis. Infectious aetiologies, such as fungal infections and skin tuberculosis, also need to be ruled out. For the identification of these diseases, dermoscopic examination is feasible. Studies have shown that the presence of glomerular vessels is a sensitive standard for BD and can guide clinicians to correctly diagnose atypical lesions^[4,11], which is consistent with our dermoscopic findings.

CONCLUSION

Dermoscopy is convenient and fast and can be used as a routine examination method for detecting skin diseases. In cases of long-term, unhealed erythema, even if there are no obvious symptoms, attention should be paid, and early dermoscopy and/or skin biopsy are needed to avoid missed diagnosis or misdiagnosis.

Table 1 Reported cases of Bowen's disease on the palm (1999–2019)

Authors	Year	Age	Sex	Symptom duration	Size (cm)	Treatment	Recurrence	Follow-up	Possible incentives
Cöl <i>et al</i> ^[3]	1999	35	M	5 yr	N/R	Cisplatin and 5-fluorouracil, radiotherapy	Yes	6 mo	Arsenic
Cavicchini <i>et al</i> ^[4]	2010	59	M	5 yr	1.4 × 1.2	N/R	N/R	N/R	HPV42
Harnaliker <i>et al</i> ^[5]	2011	42	F	15 yr	5.0 × 6.0	5-fluorouracil	N/R	N/R	Arsenic
Murao <i>et al</i> ^[6]	2013	76	F	2 yr	1.6 × 1.0	Excision	No	1 yr	HPV52
Kitamura <i>et al</i> ^[7]	2014	49	F	4 yr	0.8 × 0.8	N/R	N/R	N/R	N/R
Nakayama <i>et al</i> ^[8]	2016	85	F	2 yr	3.5 × 2.8	Excision	N/R	N/R	HPV16
Wilmer <i>et al</i> ^[9]	2013	48	M	15 yr	1.5 × 1.0	Excision	No	1 yr	N/R

N/R: Not reported.

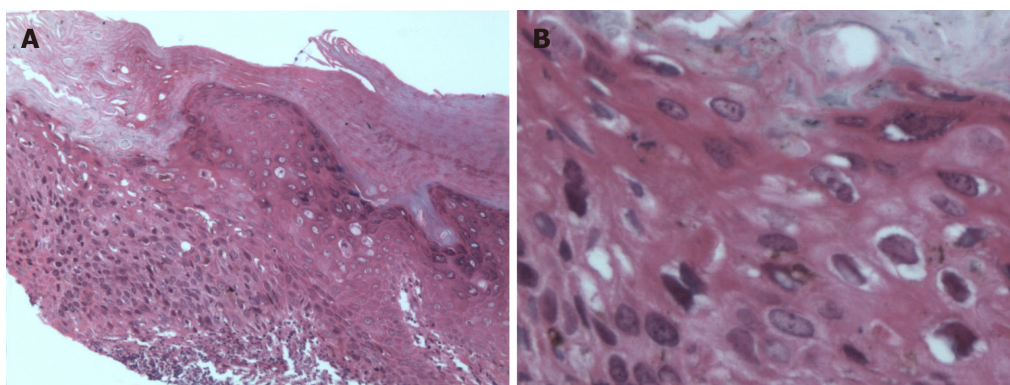


Figure 3 Pathohistological features of Bowen's disease. A and B: Tissue sections stained with hematoxylin and eosin (A: 100×; B: 200×). Histological characteristics in representative images include hyperkeratosis and parakeratosis, atypical keratinocytes throughout the epidermis, most mitotic phases, disordered cell arrangement, and dyskeratotic cells; additionally, some keratinocytes were vacuolated. A moderate amount of inflammatory infiltrate was present in the upper dermis, which is consistent with Bowen's disease.



Figure 4 Six months after surgery.

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